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TI Systems and processes for removal of pollutants from a gas stream
IN Pahlman, John E.; Carlton, Steve C.; Huff, Ray V.; Hammel, Charles F.; Boren, Richard M.; Kronbeck, Kevin P.; Larson, Joshua E.; Tuzinski, Patrick A.; Axen, Steve G.
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PI	WO 2002028513	A2	20020411	WO 2001-US28473	20010913
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	CA 2424120	AA	20020411	CA 2001-2424120	20010913
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CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2002028513	IC	B01D053-50IC B01D053-56
US 2003157008	ECLA	B01D053/04; B01D053/06; B01D053/50D; B01D053/56D; B01D053/64; B01D053/83; B01D053/86B4; B01D053/86F2C; B01D053/86N

AB The invention relates to the systems and processes for removal of pollutants, such as sulfur oxides, nitrogen oxides, and **carbon** oxides, totally reduced sulfides, **fly ash**, mercury compds., and elemental mercury from gases generated from the burning of fossil fuels and other process gases with electronic control of operational parameters such as, differential pressure across the system, gas temp., and removal efficiency. The systems and processes of the invention employ **manganese** oxides as the primary sorbent to effect removal of pollutants, such as sulfur oxides and/or nitrogen oxides, and may further employ other sorbent materials and chem. additives sep. and in conjunction with **manganese** oxides to effect the removal of other target pollutants, e.g., using alumina to remove mercury. In wet removal, **manganese** oxides are mixed in a slurry which is introduced into reaction zones of the system. In dry removal, **manganese** oxides are introduced from feeders into reaction zones of the system where they are contacted with a gas from which pollutants are to be removed. Removal may occur in single-stage, dual-stage, or multi-stage systems with at least one of the reaction zones being a wet scrubber. A variety dry scrubbers may be utilized in combination wet and dry removal systems. Reacted sorbent may be removed from the reaction action zones for recycling or recycled or regenerated with useful and marketable byproducts being recovered during regeneration.

ST **manganese** oxide absorbent regeneration flue gas treatment; sulfur oxide nitrogen oxide removal flue gas **manganese** oxide; **carbon** monoxide dioxide removal flue gas **manganese** oxide scrubbing; mercury removal flue gas alumina; nitrate sulfate **carbon** dioxide mercury recovery flue gas

IT Scrubbers
(dry; component of systems and processes employing **manganese** oxides as primary sorbents for pollutant removal from gas stream)

IT Process control
(electronic control of operational parameters; systems and processes employing **manganese** oxides as primary sorbents for removal of pollutants from gas stream)